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FILE

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)
	)
Amendment of Section 90.239	)
of the Commission's	) RM No. 8013
Rules to Adopt Permanent	)
Regulations for Automatic Vehicle	)
Monitoring Systems	)

REPLY COMMENTS

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SUMMARY

AMTECH Corporation (AMTECH) hereby replies to the comments filed on the PacTel Teletrac (PacTel) Petition for Rulemaking relating to the 902-928 MHz band. The vast majority of the comments oppose the request for exclusive access to 16 MHz of spectrum and the establishment of an AVM duopoly that would preclude multiple, competitive entry. Indeed, PacTel's principal supporter and the heir apparent to the other half of what would be an RBOC duopoly, METS/Ameritech MobileVision, appears to be using a similarly fragile technology.

PacTel and Ameritech, however, ignore the substantial existing user base served by competing AVM approaches, such as AMTECH's. AMTECH and its customers are today serving nearly 100 times as many users as PacTel and Ameritech combined, in the railroad, automotive, trucking, intermodal and air transport industries. This has been possible only by far-sighted AVM rules that permit multiple entry and have attracted significant investment in the band. The current interest and investment -- even by PacTel and Ameritech themselves -- confirm the wisdom of the agency's approach. As the comments note, the FCC should eschew choosing a particular technology and establishing a service duopoly, which would "preclude new or additional competitors who may offer a more efficient technology and use of the licensed spectrum."

The comments also confirm the fragility of the PacTel/Ameritech approach to AVM. Despite offering a spread spectrum system, their technology is incapable of operation absent an extraordinarily quiet RF environment. Yet, the 902-928 MHz band

is shared with ISM devices, other AVM systems, government radiolocation, and a host of secondary Part 15 and amateur emissions, any of which Ameritech admits would disable AVM systems utilizing its technology. Other commenters discuss the development of AVM approaches that are more robust, and the Commission should examine those alternatives before enshrining a second-class technology.

Finally, despite their prophecies of inchoate speculators, the opening round makes clear that PacTel and Ameritech themselves have been engaged in the most blatant spectrum speculation. With only four to six cities actually in operation (Ameritech has none), PacTel and Ameritech seek to convert over 1100 formerly shared licenses into the exclusive rights to provide AVM service over large areas. Such an action would work a retroactive "cut-off," without opportunity to file competing applications or petitions to deny, to the detriment of potential competitors. More importantly, it would also deny the public the benefits of service competition and constrain users to whatever construction schedule the RBOCs determine to implement.

AMTECH does not oppose the implementation of any particular AVM technology by PacTel, Ameritech or any other provider. AMTECH does, however, object to the grant of exclusivity, locking-up large portions of the 902-928 MHz band, choking investment, and degrading service to the public. AMTECH has designed AVM systems capable of tolerating co-frequency users of the band, including other AVM systems, and other commenters appear to have done so as well. Before the FCC forecloses innovation and multiple entry in the band, AMTECH suggests that the agency explore options other than the anti-competitive proposals of PacTel and Ameritech.

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REPLY COMMENTS

Pursuant to Section 1.405 of the Commission's Rules,[1] AMTECH Corporation, by its attorneys, hereby replies to the comments on the above-captioned Petition for Rulemaking filed by PacTel Teletrac (PacTel). The record in this proceeding makes clear that although certain amendments to the interim rules governing automatic vehicle monitoring (AVM) systems might be in the public interest, the adoption of the rules requested by PacTel, and now MobileVision (Ameritech), would not. At bottom, the rules sought by PacTel and Ameritech are merely an attempt to establish an RBOC duopoly in the 902-928 MHz band. In contrast with their anticompetitive proposals, there is broad support for the Commission to adopt permanent AVM rules that improve upon the existing interim rules but that continue to favor competition among and maximum flexibility by AVM systems. In this respect, the opening comments, taken

[1] 47 C.F.R. § 1.405 (1991).

as a whole, underscore the arguments made by AMTECH in its Opposition. Accordingly, AMTECH reiterates its request that the PacTel petition be dismissed or denied.

I. PERMANENT AVM RULES SHOULD PROMOTE MULTIPLE ENTRY AND SHOULD FOSTER A DIVERSITY OF AVM TECHNOLOGIES

PacTel's petition greatly downplayed the current AVM uses at 902-928 MHz. The comments on that petition, in contrast, leave no doubt that the AVM allocation is heavily utilized. Further, under the existing regulatory regime, new technological and service approaches are even now being explored, refuting the contention of the RBOCs, PacTel and Ameritech, that a multiple-entry environment will stifle future investment. The motive behind the requested rules is clearly self-serving and anti-competitive. AMTECH submits that the record in this proceeding supports a reaffirmation of the Commission's commitment to a shared-spectrum, competitive, multiple-entry environment that will let the marketplace -- not the regulatory process -- decide whose technologies and services survive.

A. Hundreds of Thousands of Users Today Rely upon AVM Technologies and Systems That Would Not Be Accommodated by the PacTel Proposal

The opening comments demonstrate that the current interim AVM rules have promoted a plethora of AVM technologies and systems. At the same time, it is clear that the AVM marketplace is not mature, particularly with regard to wideband systems.

The Teletrac technology espoused by PacTel is deployed in only a few locations and only serves a few thousand users. Moreover, the strikingly similar technology of Ameritech does not appear to have been implemented anywhere to date. An opponent of the PacTel Petition, Southwestern Bell (SWB), notes that it is currently investigating "wideband" technologies that would use no more than 4 MHz of spectrum, and perhaps even less.[2] Pinpoint Communications, Inc., another opponent, has developed a hyperbolic multilateration (HML) AVM technology that can tolerate interference from modulated backscatter and other reader/tag technologies, unlike the wideband systems of PacTel and Ameritech.[3]

Indeed, if any aspect of the marketplace is approaching maturity, it is that part utilizing reader/tag technologies, such as that employed by AMTECH. Systems employing AMTECH technology are already serving almost one hundred times more users than PacTel and Ameritech combined. In the next few years, that number will increase several-fold. Given the lack of overall AVM market maturity, therefore, the record reflects the need for permanent AVM rules to continue to foster AVM technologies in addition to those that could be deployed by PacTel and Ameritech.

As AMTECH noted in its Opposition, the technology it deploys forms the basis for the vehicle location standards adopted by several major industries standards

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[2] Comments of SWB, RM No. 8013, filed July 23, 1992, at 3.

[3] Opposition of Pinpoint, RM No. 8013, filed July 23, 1992, at 28 & n.49. Even a PacTel supporter notes that new technologies are forthcoming. See Comments of Location Services, RM No. 8013, filed July 23, 1992, at 2 (requesting flexibility in type acceptance procedure "as new technology is introduced to the public").

organizations in the transportation industry.[4] One such organization, the American Association of Railroads (AAR), filed comments detailing the importance of AVM technology like that provided by AMTECH to the effective location of railcars.[5] In fact, the recently adopted AAR Standard S-918 mandates that all railcars used in interchange service, up to 1.4 million, be equipped with modulated backscatter AVM technology by 1995.[6] Conrail, in its comments opposing the PacTel plan, explains that approximately 700,000 of the transponders have been ordered, with over 100,000 railcars already tagged.[7]

Another group, the American Trucking Associations (ATA), opposed the PacTel petition because it has adopted standards compatible with those of other industry organizations for the over one million vehicles operated by for-hire trucking firms engaged in interstate carriage. Already, in excess of 30,000 transponders are in active use today on commercial vehicles.[8] The AAR and ATA standards are compatible with the standards adopted by the International Standards Organization (ISO) and the American National Standards Institute (ANSI) for international and U.S. domestic

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[4] Opposition of AMTECH Corporation to Petition for Rulemaking, RM No. 8013, Attachment A at 4-7 ("AMTECH Opposition").

[5] Statement in Opposition to Petition for Rulemaking of AAR, RM No. 8013, filed July 23, 1992, at 2-3 ("AAR Opposition").

[6] Comments of Conrail, RM No. 8013, filed July 21, 1992, at 1; AMTECH Opposition, Attachment A at 4.

[7] Comments of Conrail at 2.

[8] Comments of ATA, RM No. 8013, filed July 22, 1992, at 1-3.

intermodal shipping containers, respectively. These four compatible standards were developed precisely to achieve a "seamless system" that would allow the tracking of containers, railcars, trailers, and other vehicles and equipment being shipped, regardless of whether they move on the water, rails or highways.[9] The potential benefits of such a system for efficient domestic and international commerce are tremendous and will redound to the benefit of the public.

In addition to meeting the requirements of the commercial transportation and shipping industries, AVM technology of the sort deployed by AMTECH is being relied upon by the administrators of airports to control traffic at their terminals and as a primary means of collecting commercial vehicle access fees. For example, the comments of the City of Los Angeles Department of Airports (LA Airports) indicated that approximately 18,000,000 transactions are electronically recorded each year using modulated backscatter devices at the Los Angeles International Airport, one of the world's busiest, and at three additional airports nearby.[10] As LA Airports notes, the PacTel proposal "would not accommodate planned future applications and does not adequately guarantee the integrity of the existing systems," in which LA Airports has already invested $2 million in hardware.[11] In addition to the Los Angeles airports,

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[9] See, e.g., Comments of American Presidents Companies, Ltd., RM No. 8013, filed July 23, 1992, at 3 ("Comments of APC"); Comments of AMTECH Logistics Corporation, RM No. 8013, filed July 23, 1992 at 2.

[10] Comments of LA Airports, RM No. 8013, filed July 23, 1992, at 1.

[11] Id. at 2, 1.

other systems are currently operating or planned in, for example, New York City, Dallas, Seattle, Oakland and Salt Lake City.[12]

Another increasingly prevalent application of AMTECH-type technology is toll collection. As detailed in the comments of the Oklahoma Turnpike Authority, AVM equipment is becoming a primary means of collecting tolls in a number of areas.[13] On the Oklahoma Turnpike alone, 250,000 tags are anticipated by the end of 1992 -- twice as many as today -- and approximately 20,000,000 toll transactions are expected to be electronically recorded this year.[14] Similarly, thousands of cars use AMTECH AVM equipment each day on the Dallas North Tollway, speeding commuters' progress and reducing congestion and air pollution.[15]

Expanding upon and complementing the above applications, modulated backscatter technology, such as that employed by AMTECH, is well-suited to further important federal policies promoting intelligent vehicle-highway systems (IVHS). As AMTECH explained in its Opposition, adoption of the PacTel proposal would frustrate IVHS objectives embodied in the Intermodal Surface Transportation Efficiency Act of

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[12] See AMTECH Opposition, Attachment A at 14; Comments of LA Airports at 2.

[13] Comments of the Oklahoma Turnpike Authority, RM No. 8013, filed July 20, 1992, at 1-2; See also Comments of the Greater New Orleans Expressway Commission, RM No. 8013, filed July 24, 1992, at 1-2; Comments of Mark IV IVHS Division, RM No. 8013, filed July 23, 1992, at 3 ("Comments of Mark IV").

[14] Comments of the Oklahoma Turnpike Authority at 1-2.

[15] Cf. Comments of Texas Turnpike Authority at 1, included with AMTECH Opposition as Attachment C thereto.

1991 and the Intelligent Vehicle-Highway Systems Act of 1991.[16] PacTel's plan might even delay a massive toll collection and IVHS project about to be started by the California Department of Transportation.[17]

In addition to the transportation applications, reader/tag technology is also being used for AVM applications in the manufacturing processes. The comments of Allen-Bradley Company, Inc. ("Allen Bradley") highlight how AVM technologies are improving operations in automobile manufacturing, food processing, and other industrial activities.[18]

As the comments discussed above and the examples set forth in Attachment A of AMTECH's Opposition illustrate, there are a number of diverse AVM applications that already serve hundreds of thousands of users and will soon be relied upon by millions. The Commission is not, as PacTel and Ameritech by and large suggest, working with a clean slate at 902-928 MHz. Undoubtedly, there are needs that may be served by the multilateration systems of PacTel, Ameritech and others, but there are many extremely important public and private requirements that are already being met by reader/tag systems. No single system can meet the full demand for AVM services.

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[16] AMTECH Opposition at 30-33. Additionally, several state transportation departments are in the process of adopting or implementing standards or systems relying upon reader/tag technology at 902-928 MHz. See Comments of APC at 4 (California standard); Comments of Mark IV at 3 (California, Arizona, Texas, New Mexico, Oregon, Washington and Utah).

[17] See AMTECH Opposition at 12.

[18] Comments of Allen-Bradley Company, Inc., RM No. 8013, filed July 23, 1992, at 4-5.

Accordingly, the public interest is not served by a regulatory scheme that precludes the operation of all but a single type of AVM technology offering only a limited scope of AVM services. Conversely, any permanent rules adopted should permit multiple entry and allow the marketplace to drive technology.[19] Such action would be good policy and consistent with Commission precedent.[20] There is no rational or sound basis to change the rules so as to freeze industry development around a particular system.

B. PacTel and Ameritech Are Engaged in Anticompetitive Attempts to Exclude Multiple AVM Entry

PacTel and its RBOC cousin, Ameritech, are each positioned to profit substantially if the requested rule changes are adopted. Specifically, PacTel and Ameritech, through their affiliates, have a total of over a thousand AVM licenses

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[19] Several changes in the rules may be warranted, but not those effectuating the policy of multiple entry. The Commission should reinforce the obligation of AVM licensees to cooperate in good faith to solve interference problems. The developmental status of operations in the 903-904 and 926-927 MHz bands should be removed. The AVM rules should explicitly permit the location of mobile objects generally, and not just "vehicles." Finally, the Commission should explore opening up the entire 902-928 MHz band available for AVM systems. AMTECH Opposition at 44-46.

[20] See, e.g., Domestic Fixed Satellite Service, 88 F.C.C.2d 318, 323 (1981) ("[o]ur experience over the last eight years leads us to reaffirm the continued validity of our domestic satellite policies as essential to the continued development of this industry and the attainment of our statutory mandate [to promote the development of new technologies]. The public interest, convenience, and necessity has been and continues to be well served by the competitive supply of diverse and innovative domestic satellite service. It is now time to turn to the difficult but necessary task of ensuring that continued new entry and growth of existing systems needed to maintain the success of this market will not be hampered.") (emphasis added).

throughout the country.[21] Adoption of the rules sought by PacTel and Ameritech would create a de facto RBOC duopoly in AVM services nationwide. It is no surprise, therefore, that Ameritech joins, with only the most minor of differences, in wholehearted support of the PacTel petition.

PacTel and Ameritech claim that new rules are needed to further investment in AVM technology. However, their own comments, in fact, as well as the comments of others, convincingly show that the flexible, multiple entry approach of the past two decades has stimulated significant investment in various AVM technologies and systems. Moreover, the record demonstrates that continued, diverse AVM growth requires that this approach continue. The proffered alternative, standardizing the virtually identical PacTel and Ameritech technologies to the exclusion of others, is anticompetitive and not in the public interest. Rather, such an alternative would only serve to sanction these two RBOCs' attempts to establish an AVM duopoly.

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[21] See Opposition of Pinpoint, Attachment A (listing numbers of PacTel and Ameritech licenses by state).

1. The Multiple Entry, Shared Spectrum Approach of the Interim Rules Has Attracted and Continues to Attract Considerable Interest And Investment in AVM Technologies

Ameritech, like PacTel, contends that, "[d]espite their past flexibility, the interim rules can no longer accommodate growing AVM technology."[22] Ameritech claims that because of their "interim" nature, the rules create considerable uncertainty among potential investors.[23] Concomitantly, without "substantial interference-free spectrum to operate" AVM technology will not become widespread and investors will be discouraged.[24] Accordingly, Ameritech calls for "[f]lexible rules [that] will encourage immediate investment, development, and provision of desired services."[25]

The facts and the comments, however, belie Ameritech's and PacTel's self-serving attempts to suggest that new rules are needed if any further investment is to be forthcoming. Under the existing rules, there has been considerable interest and investment in diverse AVM technologies. Indeed, despite its doubts about the existing rules, Ameritech and/or its partner, METS, Inc. ("METS") has invested over

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[22] Comments of Ameritech in Support of the Teletrac Petition for Rulemaking, RM No. 8013, filed July 23, 1992, at 8. See Petition for Rulemaking of North American Teletrac and Location Technologies, Inc., RM No. 8013, filed May 28, 1992, at 2 ("PacTel Petition").

[23] Comments of Ameritech at 2.

[24] Id. at 4. See also PacTel Petition at 4 (AVM's ability to attract investment will only be accomplished if the 1974 interim rules are replaced by permanent rules that PacTel proposes, including exclusive licensing) ("PacTel Petition").

[25] Comments of Ameritech at 8-9.

$40 million in the development of its AVM system.[26] PacTel appears to be similarly untroubled, because it reveals total investment of "tens of millions" of dollars.[27]

PacTel and Ameritech do not stand alone in funding so-called "wideband" technologies and systems. Pinpoint, for example, has spent several million dollars in designing a spread spectrum HML AVM technology compatible with other users of the 902-928 MHz band using 8 MHz of spectrum or more.[28] Location Services holds licenses in eight states and the District of Columbia.[29] Yet another cousin of PacTel, SWB, is investigating an AVM technology that would require, at most, 4 MHz of spectrum per licensee.[30]

AMTECH itself has invested over $12 million in research and development since 1986, and its customers have invested tens of millions in hardware and deployment. Indeed, the North American railroads' project -- only one of numerous AMTECH technology applications -- to equip over 1.4 million cars over the next thirty months alone represents a total $300 million investment.[31] As AMTECH detailed in its comments, a number of its current customers have expansion plans in addition to the

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[26] Id. at 3.

[27] PacTel Petition at 1.

[28] Opposition of Pinpoint at 3.

[29] Comments of Location Services at 1.

[30] Comments of SWB at 3.

[31] Comments of Conrail at 2. See also AAR Opposition, passim.

American railroads.[32] Substantial interest and investment in reader/tag technology is also reflected in the comments of Mark IV and Allen-Bradley.[33] AMTECH submits that, thus far, the only entities discouraged from further investment are PacTel and Ameritech, which are apparently unwilling to fund what it takes to develop robust systems and instead desire to be endowed with monopoly rights and freedom from competition in order to rely on an inferior technology.

2. Consistent with the AVM Development That the Interim Rules Have Fostered, There Is Strong Support for a Continuation of a Competitive, Multiple Entry Approach

Ameritech and PacTel claim to favor continued flexibility in the rules so as to accommodate diverse AVM needs. But, it strains credulity for them to suggest that the way to achieve this goal is to duopolize the market. PacTel and Ameritech's approach would reduce the number of technologies to one, despite the existence of competing, alternative approaches.

There is broad support in the record for permanent AVM regulations that, like the interim rules that have been in effect since 1974, promote maximum competition and flexibility through multiple entry and without government adoption of a technology baseline. For example, SWB, which is in the process of investigating AVM

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[32] See AMTECH Opposition, Attachment A, passim.

[33] Comments of Mark IV at 1-2; Comments of Allen-Bradley at 2.

technologies with capacity requirements of 4 MHz and even less spectrum, urges that the Commission not adopt rules that would "preclude new or additional competitors who may offer a more efficient technology and use of the licensed spectrum."[34] Pinpoint suggests rules that "would facilitate the development of more robust technologies that are also more compatible with other non-HML systems including various tag technologies."[35] Similarly, Mark IV, a current provider of AVM services, supports the "adoption of permanent rules for the AVM service which will promote and expand the diversity of AVM services and the opportunities for the developers of those new services and facilities to obtain spectrum and in 902-928 MHz band."[36] Indeed, even Ameritech concedes that "the flexibility of the interim rules has allowed licensees to make substantial advances in location technology."[37] PacTel concurs.[38]

A number of current users of AVM technology also strongly support continued flexibility in the AVM regulatory scheme. For example, the AAR notes that

> [t]he railroads and the AVM industry have been well served by [t]he flexibility [of the rules adopted in 1974], as it has permitted development of various AVM technologies as demanded by the marketplace. Because AVM systems are still evolving, flexible

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[34] Comments of SWB at 6. An AVM licensee in several states, Location Services, supports rules that "would provide important flexibility to new AVM system operators" since "changes are inevitable as new technology is introduced to commercial operations." Comments of Location Services at 3.

[35] Opposition of Pinpoint at 28.

[36] Comments of Mark IV at 2.

[37] Comments of Ameritech at 8.

[38] PacTel Petition at 3 ("Teletrac has developed and commercially implemented its innovative systems under [the] interim rules.")

> rules that do not lock-in any particular technology would continue to serve the public interest.[39]

American President Companies, Ltd. (APC), one of the largest U.S.-based intermodal container shipping companies, opposes the PacTel petition because it would frustrate the continued growth of AVM technologies. In contrast to PacTel's proposal for two 8 MHz exclusive licenses per market, "[s]hared use of the spectrum allows multiple beneficial users of the spectrum to compete in the marketplace with their products."[40] Similarly, the ATA notes that rules granting exclusive use of the spectrum to PacTel and one other wideband licensee would frustrate the purpose of the AVM technology standard adopted by ATA, as well as those adopted by many other industry standards organizations, and would interfere with numerous AVM systems implemented under the current flexible rules.[41]

Not only do the comments call for multiple entry, they demonstrate that the spectrum can support it. AMTECH explained in its Opposition how it has been a good

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[39] AAR Opposition at 5.

[40] Comments of APC at 3.

[41] Comments of ATA at 3.

spectral neighbor.[42] But the record also shows that so-called wideband systems can also achieve compatibility.

Pinpoint, for example, has designed an HML system "with the full expectation that it would operate in a shared environment in the presence of a variety of other emitters."[43] Moreover, Pinpoint contends that "definitely" more than two hyperbolic multilateration systems may be accommodated within the 902-928 MHz band without requiring so-called narrowband systems to move.[44] Similarly, SWB argues persuasively that the Commission should not entrench an 8 MHz technology that would require exclusive use when there are potentially viable options for multiple systems using 4 MHz or less.[45] Indeed, SWB suggests that, "[a]t the very least, Teletrac and

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[42] Ameritech claims that the current rules do not permit so-called "narrowband" licenses in the 904-912 and 918-926 MHz bands. Comments of Ameritech at 5, 8. However, as AMTECH explained in its Opposition, to effectuate its operations, AMTECH systems often are "wideband," from a spectrum requirements standpoint. In any event, the FCC's consistent interpretation of the rules has licensed AMTECH systems in those bands, perhaps because the rules at the time Section 90.239 was adopted, as well as now, mandated sharing of the spectrum. See AMTECH Opposition at 19 n.35 and accompanying text; 47 C.F.R. § 90.173(a) (1991). Indeed, as Ameritech acknowledges, the Commission has authorized licenses to AVM systems in this spectrum on a shared basis, not only between narrowband and wideband systems, but also between wideband systems alone. See Comments of Ameritech, Technical Appendix at 16.

Realizing that its called-for ban of narrowband systems at 904-912 and 918-926 MHz would impair some of its own plans in that spectrum, Ameritech calls for a revision of the AVM rule to allow it and other so-called "wide band" licenses to offer narrowband service as well. Comments of Ameritech at 15. Ameritech's overt effort to exclude all narrowband communications except its own from the 904-912 and 918-926 MHz sub-bands is anti-competitive: it would eject other users from the spectrum in order to obtain the monopoly rights to provide those self-same services.

[43] Opposition of Pinpoint at 14. See also id. at 28 & n.49 (Pinpoint's array system is compatible with modulated backscatter technologies.).

[44] Id. at 9.

[45] Comments of SWB at 3. In addition to requiring less spectrum, SWB does not indicate that displacement of so-called narrowband systems would be required.

other supporting commenters [Ameritech and Location Service] should be put to the test to document why it is 'essential' that the permanent rules retain the 8 MHz wide frequency assignment plan."[46]

AMTECH concurs with SWB's suggestion, and would reiterate that it is the statutory burden of PacTel and Ameritech to show why the public interest would be served by rules that would chill the further full development of AVM technology and services.[47] Indeed, it is clear that PacTel and Ameritech manifestly have not, and cannot, show why an exclusive 8 MHz allocation is the best approach. Because PacTel and Ameritech have failed to carry their burden of proof on this issue, the Commission should not grant the petition.

3. PacTel and Ameritech Seek to Establish an Anti-Competitive Duopoly

In contrast to the majority of commenters, only Ameritech supports the PacTel call for exclusive 8 MHz licenses at 904-912 and 918-926 MHz. However, to do so, Ameritech and PacTel completely gloss over the public interest benefits that spectrum sharing -- and multiple competitive entry -- have provided. In light of these facts, neither the petitioner nor Ameritech have explained why the public interest requires exclusive licensing in 80 percent of the current AVM allocation.

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[46] Comments of SWB at 3-4.

[47] 47 U.S.C. § 157(a) (1988); see also AMTECH Opposition at 25-26.

The petition and Ameritech's support should be seen for what they are, a thinly veiled attempt to create a Regional Bell Operating Company duopoly at 902-928 MHz. APC, in its comments, aptly notes that PacTel -- and its observations apply to Ameritech as well -- "as a regulated company [is] accustomed to operating in a limited competition environment, [and] has only recently been permitted to enter into the information services business."[48] While their attempt to duopolize AVM service provision is not a direct result of their local exchange monopolies, PacTel and Ameritech are trying to impose a monopoly-like environment in an area that has no historical or practical basis for being that way. To the contrary, the past twenty years have shown the benefits of competition and open entry.

The anti-competitive position of Ameritech is underscored by its suggested "modification" of the PacTel construction requirements. PacTel proposed a ten-year build-out deadline for systems of ten cities or more.[49] That in itself is egregious in that it will inevitably prolong the time in which the public must wait for service. Ameritech goes even further and proposes that licensees in ten to twenty-five markets be required to build-out their systems in three years, but those in twenty-five or more markets build their systems out in ten years.[50] Since both PacTel and Ameritech have significantly more than twenty-five licenses, this proposal is merely a blatant attempt to

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[48] Comments of APC at 3.

[49] PacTel Petition at 33.

[50] Comments of Ameritech at 16-17.

further discriminate in favor of these two companies to the exclusion of other, would-be AVM service providers.[51]

The Commission should continue, as it has in other areas, to allow the marketplace to decide which needs should be met and which technologies and providers should meet them.[52] The public interest benefits and continued reliance upon the marketplace concerning AVM technology has been made clear by the comments. By contrast, the PacTel and Ameritech requests for a government election of a particular technology as the baseline should not be granted. The PacTel Petition, as Mark IV points out, "fails to give adequate recognition to system designs and technologies which are different from those employed by North American Teletrac."[53] Mark IV's observation applies just as well to Ameritech, which proposes to employ a comparable technology. SWB makes the point even more clearly: the "Commission [should] not

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[51] Ameritech never clearly explains why the public interest favors its plan. AMTECH submits that, rather than obtain and warehouse licenses, Ameritech should apply only in locations it intends to construct in the near future.

[52] See, e.g., Domestic Fixed Satellite Service, 88 F.C.C.2d at 322-23 ("We have sought to impose only the minimal [technical] regulations needed to insure that all proposed satellites can be accommodated in orbit to satisfy demand and permit new entry. . . . [W]e believe our flexible, multiple entry approach has proven to be a reliable tool for achieving full and efficient use of the geostationary satellite orbit and the frequencies associated with it."); Allocation of the 849-851/894-896 MHz Bands, 5 F.C.C. Rcd 3861 (1990) (adopting a flexible, open-entry approach in which the applicants choose the appropriate technology).

[53] Comments of Mark IV at 2.

preclude new or additional competitors who may offer a more efficient technology and use of the licensed spectrum."[54]

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In conclusion, in stark contrast to the dire predictions of Ameritech and PacTel, there is a continued interest in AVM technologies and AVM system deployment under the existing regulatory regime. The rules proposed by PacTel and supported by Ameritech would not further these important objectives, but merely their own duopolistic aims. Indeed, and precisely opposite to their contention, PacTel and Ameritech's requested rule changes would likely stifle investment and interest in AVM development and freeze the RBOCs' inferior technology as the only game in town. The Commission should not be led down this path but should continue to promote multiple entry and a flexible technological approach in a shared spectrum environment.

II. AMERITECH'S COMMENTS CONFIRM THAT IT AND PACTEL SEEK UNWARRANTED REGULATORY PROTECTION FOR A FRAGILE TECHNOLOGY

As AMTECH discussed in its Opposition, the PacTel system is self-evidentially fragile. In particular, Appendix 2 to its Petition demonstrates that PacTel requires an

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[54] Comments of SWB at 6.

extraordinarily quiet radio environment over large areas in order to operate.[55] The comments on the PacTel petition support AMTECH's observations. In light of the system fragility, the Commission should not grant PacTel and Ameritech exclusivity because it would frustrate the Commission's carefully balanced allocation scheme between AVM and other users.

The comments of Ameritech confirm the technological deficiencies of the AVM techniques employed both by PacTel and Ameritech. First, Ameritech's technical appendix makes explicit that, as a general matter, these systems cannot coexist with other users of the 902-928 MHz band:

> Any co-frequency device or signal within the 8 MHz bandwidth set aside for AVM operations will interfere with AVM operations, whether the interference is narrowband or wideband. Specifically, the sources of interference experienced by AVM systems are industrial, scientific and medical equipment, amateur radio operators, wireless local area networks ('LANs') and tag readers, e.g., toll booth operators and the anti-shoplifting clothing tags.[56]

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[55] See AMTECH Opposition at 40-43.

[56] Comments of Ameritech, Technical Appendix at 10 (emphasis added). Ameritech's passing reference to tag readers on page 10 of its Technical Appendix is representative of its efforts, parallel to those of PacTel, to mischaracterize the rights of users of AVM technology other than their own, as inferior. Ameritech lumps reader/tag AVM operations, such as those of AMTECH and its customers, with secondary Part 15 devices in the quoted text and later with secondary amateur radio stations. Ameritech's disingenousness extends still further, as well as its futile efforts to downplay the advances of other operational AVM systems in the band, when it states "no market has experienced the simultaneous operation of two co-channel AVM service providers." Id., Technical Appendix at 10.

Ameritech acknowledges that co-channel "wideband" AVM operators would create a serious problem for it.[57] Ameritech even admits that its "AVM operations can cause self-induced interference as well."[58]

Although PacTel proffered some discussion regarding in-band AVM operations, PacTel did not analyze interference from Part 15 devices and amateur radio, despite the fact that they are operating on a secondary basis throughout the band. Ameritech confirms this notable deficiency of the PacTel interference analysis: the petition did "not account for the 'ambient' noise and interference in addition to the single sources of interference. The most common source of ambient noise is Part 15 users."[59] Ameritech actually supplies the information omitted by PacTel, but analysis of their submission confirms the fragility of the basic technology it and PacTel intend to employ. Ameritech concludes that Part 15 devices can cause significant problems to its AVM technology by raising the interference level seen by receive sites. The net effect is to make co-channel AVM operation even more difficult.[60] Similarly, the operations of amateur radio operators pose substantial interference problems to the AVM technology employed by PacTel and Ameritech.[61]

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[57] See id. at 11 & Technical Appendix at 10.

[58] Id., Technical Appendix at 10.

[59] Id., Technical Appendix at 16.

[60] Id., Technical Appendix at 16-17.

[61] See, e.g., id., Technical Appendix at 12 n.6.